

Amendment to the Claims:

1 (currently amended): A method of calculating a switching threshold delay and a slope delay for a gate input signal of a cell ~~Thevenin parameters~~ comprising ~~[[the]]~~ steps of:

(a) initializing estimates of a first effective capacitance ~~capacitances~~ C_{eff1} , of a second effective capacitance ~~capacitance~~ C_{eff2} , of a switching threshold delay t_0 , and of a slope delay Δt for a gate input signal of a cell; ~~[[and]]~~

(b) solving ramp response equations for a capacitive load and a driver resistance to calculate solutions for t_0 and Δt as a function of the first effective capacitance C_{eff1} for a rising or falling transition voltage of the gate input signal and as a function of the second effective capacitance C_{eff2} for fifty percent of a final transition voltage of the gate input signal;

(c) if the calculated solutions for t_0 and Δt have converged to the estimates of t_0 and Δt within a desired accuracy, then continuing from step (e), else continuing from step (d);

(d) replacing the estimates of t_0 and Δt with the calculated solutions for t_0 and Δt , respectively, and continuing from step (b); and

(e) generating as output the calculated solutions for the switching threshold delay t_0 and the slope delay Δt for the gate input signal of the cell.

2-4 (canceled)

5 (currently amended): The method of Claim 1 ~~[[3]]~~

further comprising the step of (f) calculating a solution for a first delay delay1 to the rising or falling transition voltage of the gate input signal as a function of the estimate of the first effective capacitance C_{eff1} ~~$t_{30}(C_{eff1})$ or $t_{70}(C_{eff1})$~~ and a solution for a second delay delay2 to fifty percent of the final transition voltage of the gate input signal as a function of the estimate of the second effective capacitance C_{eff2} ~~$t_{50}(C_{eff2})$~~ from a Foster or a pi model.

6 (currently amended): The method of Claim 5 further comprising the step of (g) comparing the delays delay1 and delay2 to delays delay1' and delay2' respectively, wherein the delays delay1' and delay2' are estimated from a function of input ramptime and capacitance corresponding to the estimates of the effective capacitances C_{eff1} and C_{eff2} , respectively in a delay lookup table.

7 (currently amended): The method of Claim 6 further comprising the step of (h) replacing the estimates of the effective capacitances C_{eff1} and C_{eff2} with finding new values for C_{eff1} and C_{eff2} from the function of input ramptime and capacitance a reverse lookup of delay1 and delay2 in the delay lookup table if the delays delay1 and delay2 have not converged to the delays delay1' and delay2' within a desired accuracy.

8 (canceled)

9 (currently amended): The method of Claim 7 [[8]] further comprising the step of (i)[[(j)]] repeating steps (b) through (h)[[(i)]] until the delays delay1 and delay2 converge to the delays delay1' and delay2' within a desired accuracy.

10 (currently amended): A computer program product comprising:

a medium for embodying a computer program for input to a computer; and

a computer program embodied in the medium for causing the computer to perform steps of at least one of the following functions:

(a) initializing estimates of a first effective capacitance C_{eff1} , of a second effective capacitance C_{eff2} , of a switching threshold delay t_0 , and of a slope delay Δt for a gate input signal of a cell; [[and]]

(b) solving ramp response equations for a capacitive load and a driver resistance to calculate solutions for t_0 and Δt as a function of the first effective capacitance C_{eff1} for a rising or falling transition voltage of the gate input signal and as a function of the second effective capacitance C_{eff2} for fifty percent of a final transition voltage of the gate input signal;

(c) if the calculated solutions for t_0 and Δt have converged to the estimates of t_0 and Δt within a desired accuracy, then continuing from step (e), else continuing from step (d);

(d) replacing the estimates of t_0 and Δt with the calculated solutions for t_0 and Δt , respectively, and continuing from step (b); and

(e) generating as output the calculated solutions for the switching threshold delay t_0 and the slope delay Δt for the gate input signal of the cell.

~~(c) comparing the estimates of t_0 and Δt with solutions for t_0 and Δt found in step (b);~~

~~(d) replacing the estimates of t_0 and Δt with~~

~~the solutions for t_0 and deltat if the solutions for t_0 and deltat have not converged to the estimates of t_0 and deltat ,~~

~~(e) repeating steps (b), (c), and (d) until the solutions for t_0 and deltat converge to the estimates of t_0 and deltat ,~~

~~(f) calculating a delay1 as a function of $t_{30}(\text{Ceff1})$ or $t_{70}(\text{Ceff1})$ and a delay2 as a function of $t_{50}(\text{Ceff2})$ from a Foster or a pi model,~~

~~(g) comparing delay1 and delay2 to delays delay1' and delay2' corresponding to Ceff1 and Ceff2 in a delay lookup table,~~

~~(h) finding new values for Ceff1 and Ceff2 from a reverse lookup of delay1 and delay2 in the delay lookup table if delay1 and delay2 have not converged to delay1' and delay2' ,~~

~~(i) replacing the estimates of Ceff1 and Ceff2 in step (b) with the new values for Ceff1 and Ceff2 , and~~

~~(j) repeating steps (b) through (i) until delay1 and delay2 converge to delay1' and delay2' .~~

11 (new): The computer program product of Claim 10 further comprising the step of (f) calculating a solution for a first delay delay1 to the rising or falling transition voltage of the gate input signal as a function of the estimate of the first effective capacitance Ceff1 and a solution for a second delay delay2 to fifty percent of the final transition voltage of the gate input signal as a function of the estimate of the second effective capacitance Ceff2 .

12 (new): The computer program product of Claim 11 further comprising the step of (g) comparing the delays delay1 and delay2 to delays delay1' and delay2' respectively, wherein

delay1' and *delay2'* are calculated as a function of input ramptime and capacitance corresponding to the estimates of the effective capacitances *Ceff1* and *Ceff2*.

13 (new): The computer program product of Claim 12 further comprising the step of (h) replacing the estimates of the effective capacitances *Ceff1* and *Ceff2* with new values from the function of input ramptime and capacitance if the delays *delay1* and *delay2* have not converged to the delays *delay1'* and *delay2'* within a desired accuracy.

14 (new): The computer program product of Claim 13 further comprising the step of (i) repeating steps (b) through (h) until the delays *delay1* and *delay2* converge to the delays *delay1'* and *delay2'* within a desired accuracy.

15 (new): The computer program product of Claim 14 further comprising the step of (j) generating as output the calculated solution for the first delay *delay1* as a function of the estimate of the first effective capacitance *Ceff1* and the calculated solution for the second delay *delay2* as a function of the estimate of the second effective capacitance *Ceff2*.

16 (new): The method of Claim 9 further comprising the step of (j) generating as output the calculated solution for the first delay *delay1* as a function of the estimate of the first effective capacitance *Ceff1* and the calculated solution for the second delay *delay2* as a function of the estimate of the second effective capacitance *Ceff2*.